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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,866	09/08/2000	Dirk P. Gunther	7099-1267	2936

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EXAMINER

PORTER, RACHEL L

ART UNIT	PAPER NUMBER
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3626

DATE MAILED: 07/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/658,866

Applicant(s)

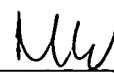
GUNTHER ET AL.

Examiner

Rachel L. Porter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Notice to Applicant

1. This communication is in response to the application filed 4/8/04. Claims 1-17 are pending.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-7 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

- (1) whether the invention is within the technological arts; and
- (2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter.

For a process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts. In the present case claim 1 only recites an abstract idea. The recited steps of merely determining a set of itineraries does not apply, involve, use, or advance the technological arts since all of the recited steps can

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be performed in the mind of the user or by use of a pencil and paper. These steps only constitute an idea of how to maximize profitability for a (travel) service provider.

As to technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or field of use) or mere implication of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. In the present case, none of the recited steps are directed to anything in the technological arts as explained above with the exception of the recitation in the preamble that the method is "computer implemented". Looking at the claim as a whole, nothing the body of the claim recites any structure or functionality to suggest that a computer performs the recited steps. Therefore, the preamble is taken to merely recite a field of use.

The deficiencies in the present claim may be overcome by simply expressly stating in the body of the claims the use of technology, such as a *computer* processor and/or a *computer* database.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result. In the present case, the invention of claims 1-7 produces a set of itineraries (i.e., repeatable) used in determining/selecting the best set of market plans to optimize profitability. (i.e., useful and tangible).

Although the recited process of claims 1-7 produces a useful, concrete, and tangible result, since the claimed invention, as a whole, is not within the technological

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arts as explained above, claim 1 is deemed to be directed to non-statutory subject matter.

Claims 2-7 inherit the deficiencies of claim 1 through dependency, and are also rejected.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6-7, 11-14, and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Barlow (USPN 5,652,867).

As per the limitations of claims 1-4 and 6-7, Barlow teaches a method for optimizing a schedule of legs employed in transporting objects between geographic markets, comprising the steps of:

- identifying a set of itineraries for serving each market in a set of markets, each itinerary comprising one or more legs; (Figure 1; col. 3, lines 45-65)
- generating a set of market plans for each of a plurality of markets (e.g. set of markets), each market plan comprising a modified set of the itineraries for the market, (Figures 2 and 4; col. 4, lines 15-45,)

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- individually determining the profitability of each market plan for each market, following generation of new set of market plans for each of the plurality of markets (Figs 2,4-5;col. 5, lines 66-col. 6, line 4)
- selecting from the set of market plans for each market a subset optimizing the profit of the schedule, while accounting for the resources of the service provider, wherein the subset of markets is selected following a determination of profitability for each market plan for each market (Figures 2, 4-5; col. 2, lines 39-47; col. 6, lines 36-46, 56-67)

Barlow further teaches a method that uses a "profitability model" (i.e. a model that assists in determining the profitability of various itineraries) and wherein various parameters may be considered and/or manipulated in determining flight schedules (col. 5, lines 29-46).

Claims 11-14 and 16-17 repeat the subject matter of claims 1-4 and 6-7 as a set of computer readable instructions (for causing a computer) to perform the steps recited in claims 1-4 and 6-7. As the underlying process has been shown to be fully disclosed and computer implemented by the teachings of Barlow et al in the above rejection of claims 1-4 and 6-7, it is readily apparent that the Barlow reference includes computer instructions cause a compute to perform the recited functions. As such, these limitations are rejected for the same reasons provided in the rejection of claims 1-4 and 6-7, and incorporated herein.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 8-10, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barlow et al (USPN 5,652,867) in view of Official Notice.

As per claim 5, Barlow teaches a method for optimizing schedules and transportation legs as explained in the rejection of claim 1, but does not expressly disclose the use of a mixed integer program in performing these optimization functions. However, it is noted that the use of mixed integer programs for optimization problems is old and well known in the art. At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to incorporate the use of a mixed integer program in the optimization method of Barlow. One would have been motivated to include this feature to efficiently model and process the complex calculations required for the optimization process.

System claims 8-10 repeat the subject matter of claims 1-4 as a set of components capable of performing the functions recited claims 1-4. As the underlying process has been shown to be fully disclosed by the teachings of Barlow et al in the above rejection of claims 1-4, it is readily apparent that the Barlow reference includes a system to perform the recited functions. As such, these limitations are rejected for the same reasons provided in the rejection of claims 1-4 and incorporated herein.

Claim 8 further recites that the system includes a mixed integer program for performing various optimization functions (e.g. subsetting functions). Barlow teaches a system for optimizing schedules and transportation legs as explained in the rejection of claim 1, but does not expressly disclose the use of a mixed integer program in performing these optimization functions. However, it is noted that the use of mixed integer programs for optimization problems is old and well known in the art. At the time of the Applicant's invention, it would have been obvious to one of ordinary skill in the art to incorporate the use of a mixed integer program in the optimization system of Barlow. One would have been motivated to include this feature to efficiently model and process the complex calculations required for the optimization process.

As per claim 15, the limitations of the present claim are addressed by the rejections of claims 5 and 11, and incorporated herein.

Response to Arguments

7. Applicant's arguments filed 4/8/04 have been fully considered but they are not persuasive.

(A) On pages 6-9, paragraph (A), Applicant argues that the rejections of claims 1-7 and 11-17 under 35 U.S.C. 101 are improper. In particular, Applicant argues that there is no requirement that computer components or computer-implementation be recited in the body of the claims, and cites sections from the *State Street Bank* decision to support this position. In addition, the Applicant argues that amendments to claim 11 overcome the 101 rejections of claims 11-17.

In response, the rejections of claims 11-17 under 35 U.S.C. 101 are hereby withdrawn due to the amendments filed 4/8/2004.

As per claims 1-7, it is noted that the Examiner's rejection was not based on the fact the claimed process is not useful, tangible, or concrete, nor that claimed process lacks a practical application, *per se*. Rather, the basis of the Examiner's rejection was that the recited claims were not directed to a practical application in the technological arts.

With regard to this issue, it is respectfully submitted that Applicants' reliance on the *State Street Bank* decision is not persuasive. Applicants' presently recited claims clearly lack a practical application in the technological arts in a manner consistent with the claims reviewed by the Federal Circuit in the *State Street Bank* decision. Exemplary claim 1 does not rise the level of the claims under review, which clearly and explicitly recite a practical application in the technological arts by the incorporating a computer processor and/or other computer means for performing specific functions in the body of the claim.

With respect to Applicant's allegation that the *State Street* decision does not require a claimed invention to be within the technological arts in order to be statutory, the Examiner respectfully submits that the sole reason that the court did not expand on the "technological arts" standard was that the claims reviewed by the courts were clearly within the technological arts as evidenced by ample references to computer hardware within the body of the claims in addition to the showing of a concrete, tangible, and useful result.

Since the language recited in the court decision is clearly of a format not presently utilized by Applicant's recited claim language, Applicant's contention that a mere showing of a practical application without reference to the technological arts as a standard for determining statutory subject matter based on *State Street*, wherein the claims explicitly recite technological arts in the determination of a practical application is not persuasive.

There are several other court decisions that clearly support the Examiner's position. For example, the court in *In re Toma* stated: " 'technological' or 'useful' arts inquiry must focus on whether claimed subject matter, for example, method of operating machine to translate, is statutory, not on whether product of claimed subject matter, for example, translated text, is statutory, not on whether prior art that claimed subject matter purports to replace, for example, translation by human mind, is statutory, and not on whether claimed subject matter is presently perceived to be improvement over prior art, for example, whether it 'enhances' operation of machine; this was law prior to *Gottschalk v. Benson*, 175 USPQ 673, and was not changed by *Benson*." (emphasis added) 197 USPQ 852, 853 (CCPA 1978).

In *In re Musgrave*, 167 USPQ 280 (CCPA 1970), it was held that "... all that is necessary to make a sequence of operational steps a statutory 'process' within 35 U.S.C. 101 is that it be in the technological arts so as to be in consonance with Constitutional purpose to promote progress of "useful arts."

Moreover, the Examiner respectfully submits that since the most recent decisions neither reverse, vacate, or otherwise directly nullify the decisions set forth in *Musgrave*,

Toma, and the other older court cases, it is the totality of the decisions in consonance that establishes the current standard for determining patentable subject matter under 35 U.S.C. 101. As such, it is respectfully submitted that Applicant's interpretation of the the current 101 standard fails to properly consider the fact that, in order to be statutory, computer-related processes are to be limited to a practical application (i.e., useful, concrete, & tangible) within the technological arts.

In sum, it is respectfully submitted that the Examiner's rejection of the claims 1-7 under 35 USC 101 is indeed proper and should be maintained.

(B) On pages 11-15, Applicant argues that the 102 rejections of the pending claims has been overcome by including amended claim language reciting that a plurality of markets and market plans are processed by the claimed invention.

In response, the Examiner respectfully disagrees with the Applicant's interpretation of the applied reference. The Barlow reference is to be used to optimize the scheduling of travel services worldwide, in all markets of interest (col. 3, line 45-65; col. 4, lines 6-45. Therefore, the inclusion of claim language reciting that a process is performed for a plurality of markets is not seen by the Examiner as a patentable distinction over the disclosure of the Barlow reference.

Moreover, even if the Barlow reference did not disclose the application of the method/system for a plurality of markets and market plans, the courts have broadly held that the duplication of parts/steps is obvious. *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960). As such, these changes (i.e. the amendments to the claim language) do not present a patentable distinction over the applied prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel L. Porter whose telephone number is 703-305-0108. The examiner can normally be reached on M-F, 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Thomas can be reached on (703)305-9588. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-1113.

RP



ALEXANDER KALINOWSKI
PRIMARY EXAMINER